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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,822	02/09/2004	Bryan P. Dube	EH-10909(04-103)	9239
34704	7590	06/14/2005		
BACHMAN & LAPOINTE, P.C. 900 CHAPEL STREET SUITE 1201 NEW HAVEN, CT 06510			EXAMINER WHITE, DWAYNE J	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/774,822

Applicant(s)

DUBE ET AL.

Examiner

Dwayne J. White

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/9/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 14, 15, 17, 18 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Merry (6,672,836). Merry discloses a turbine engine blade comprising a airfoil portion having a span; a plurality cooling passageway 7 in the airfoil portion extending from root 58 to tip 56; and a plurality of turbulators T disposed in the plurality of cooling passageway having a P/e that varies along the span (Column 9, lines 45-60). The P/e ratio is lower in the midspan region of the passageway that in an end region of the passageway and lies with in the range of 5-20.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merry.

Merry discloses all of the claimed subject matter except a specific range of the pitch in the regions of the root, midspan, and tip or a specific range of the height.

Since applicant has not disclosed that having the range of the pitch and height of the turbulators solves any stated problem or is for any particular purpose above the fact that the pitch to height ratio (p/e) varies the cooling properties of the cooling passageway and it appears that the turbulators of Merry would perform equally well with having the dimensions as claimed by applicant and further Merry discloses that the P/e ratio can vary based on the desired cooling properties, it would have been an obvious matter of design choice to modify the turbulators of Merry by utilizing dimensions as claimed for the purpose of improving the cooling properties of the turbulators in the cooling passageways.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Merry in view of Butts (5,232,343). Merry discloses all of the claimed subject matter except the height to diameter (e/D) ratio being in the range of 0.05 to 0.30.

Butts teaches turbulators having an e/D ratio of 0.07 to .333 (Column 4, lines 9-45).

Since both Merry and Butts disclose cooled turbine engine blades with turbulators, it would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the

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turbulators of Merry, with the teachings of Butts, by having a ratio as claimed for the purpose of improving the cooling properties of the cooling passageway.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Merry in view of Staub et al. (5,924,843). Merry discloses all of the claimed subject matter except the method of manufacturing.

Staub et al. teaches that a cooled turbine blade having turbulators can be manufactured using casting process (column 6, lines 7-12). Since both Merry and Staub et al. disclose cooled turbine blades and it is well known that casting is used as a process for producing turbine blades, it would have been obvious at the time the invention was made to one of ordinary skill in the art to manufacture the turbine blade of Merry using a casting process as taught by Staub et al. for the purpose of producing the turbine blade.

CONCLUSION

Allowable Subject Matter

Claims 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

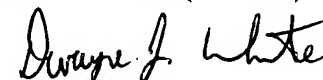
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwayne J. White whose telephone number is (571) 272-4825. The examiner can normally be reached on 7:30 am to 5 pm T-F and alternate Mondays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dwayne White
Patent Examiner
Art Unit 3745

DJW



EDWARD K. LOOK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700

6/11/05